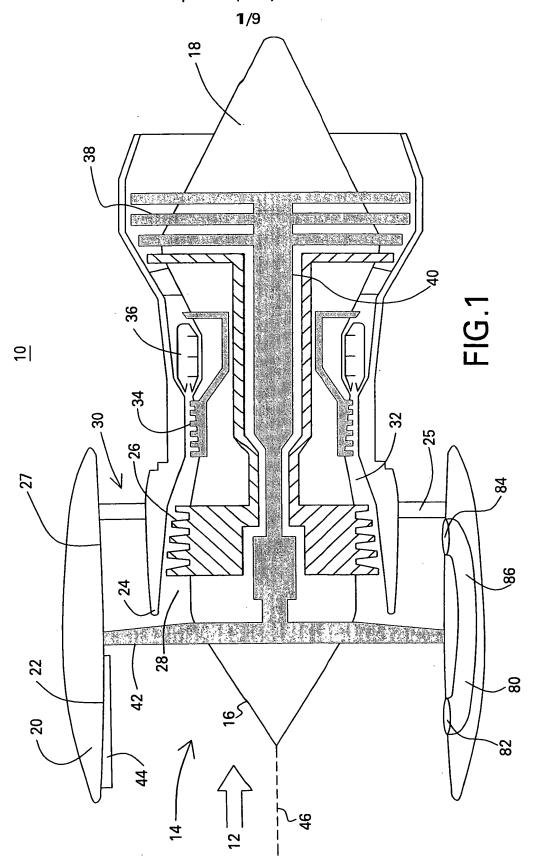
Inventors(s):Ramani Mani

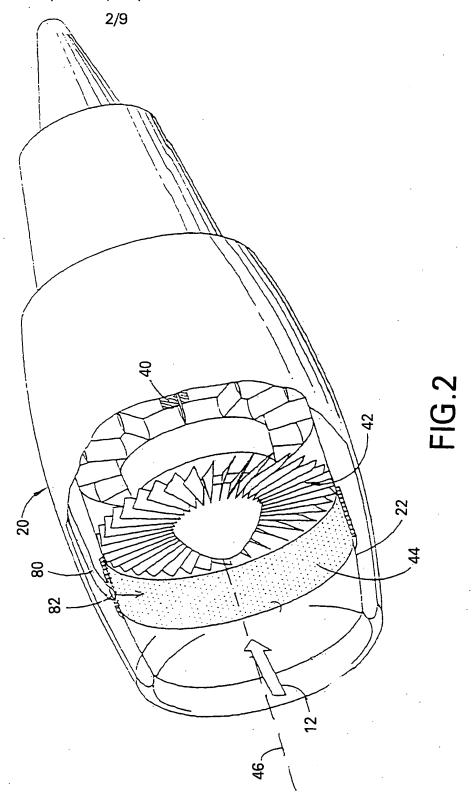
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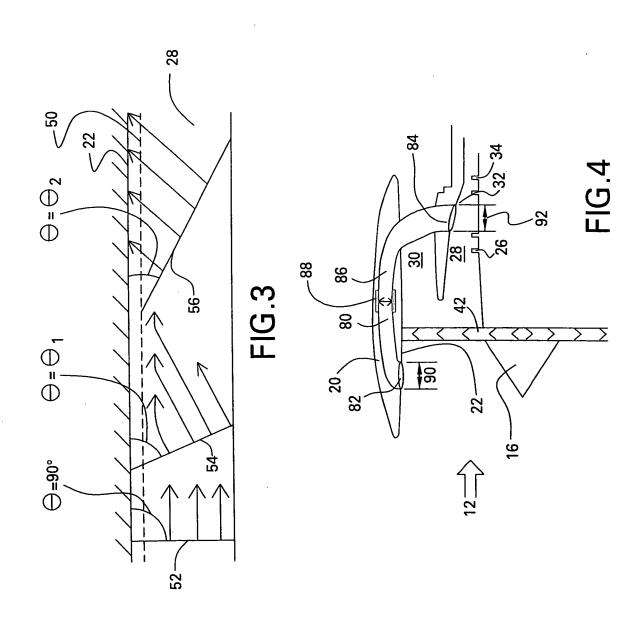
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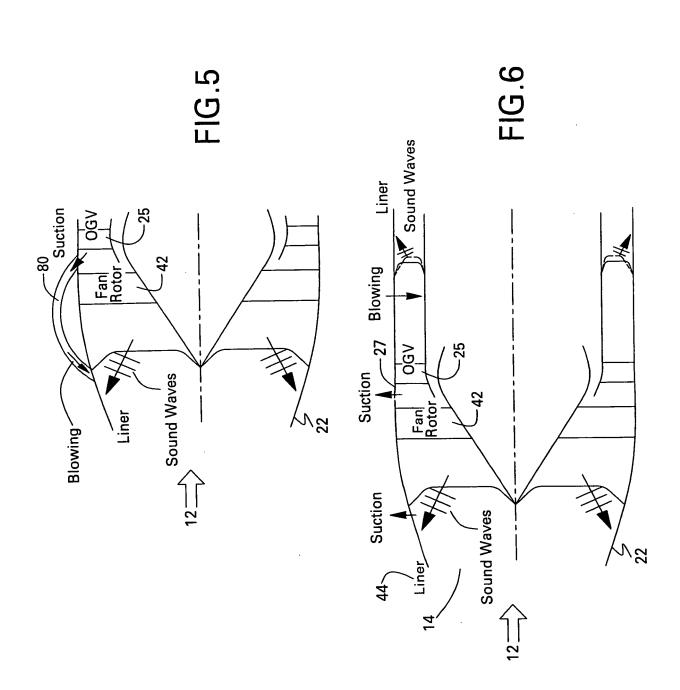
3/9



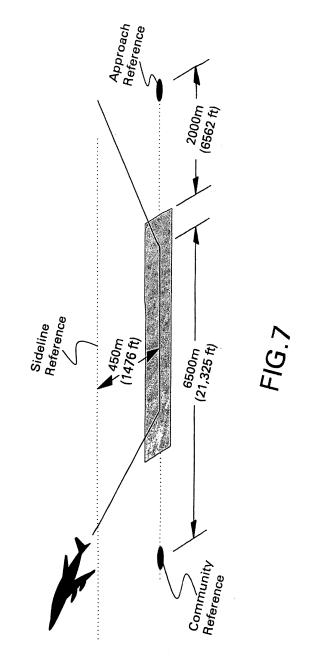
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4/9



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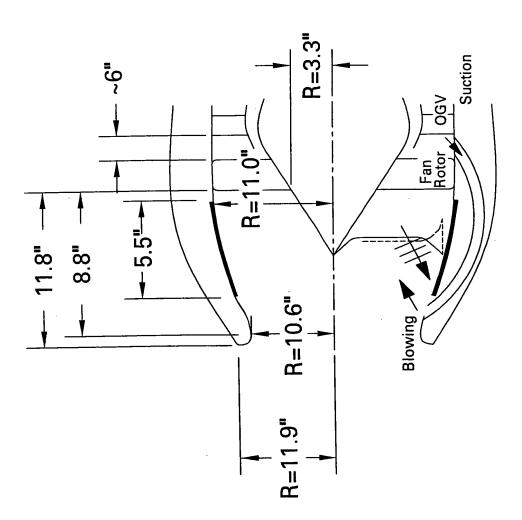
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6/9

FIG.8



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7/9

Increase air velocity adjacent to an inlet fan duct outer wall, to a greater rate than typical velocity of an operational engine ambient inlet air flow adjacent to the inlet fan duct outer wall.

Reduce a boundary layer and associated turbulence adjacent to the inlet fan duct outer wall.

Optimize refraction and absorption of inlet sound into an acoustic liner along the inlet fan duct outer wall.

Inject air adjacent to the inlet fan duct outer wall and substantially directed aft a fan, wherein the injected air is distinct from ambient inlet air.

Extend air injection axially.

Extend air injection with substanial circumferential uniformity.

Inject a mass-flow of air within a range of one percent to two percent of the ambient inlet air.

Draw air from at least one of a bypass flow stream (downstream a fan rotor and upstream a fan discharge outlet guide vane) and a core flow stream.

Create a pressure difference to self-aspirate the injecting air, wherein the inlet fan duct area has a first variable pressure, the bypass flow stream has a second variable pressure and the core stream has a third variable pressure.

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8/9

Exert a suction force on ambient inlet air adjacent to the inlet fan duct outer wall

Draw a mass-flow rate of the ambient inlet air within a range of one to two percent of the ambient inlet air.

Inject air to aft fan discharge outlet guide vane

air within a range of one

percent to two percent of

the ambient inlet air.

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9/9

Increase air velocity adjacent to a bypass duct outer wall, to a greater rate than typical velocity of an operational engine bypass air flow adjacent to the bypass duct outer wall. Reduce a boundary layer and associated turbulence adjacent to the bypass duct outer wall. Optimize refraction and absorption of inlet sound into an acoustic liner along the bypass duct outer wall. Utilize one of inject air adjacent to the bypass duct outer wall and exert a suction force on air adjacent to the bypass duct outer wall. Extend air injection at least Exert a suction force at one of axially and with least one of axially and substantial circumferential with substantial uniformity. circumferential uniformity Inject a mass-flow rate of Draw a mass-flow rate of

air within a range of one

percent to two percent of

the ambient inlet air.